AMENDMENTS TO THE CLAIMS

This following listing of claims replaces all previous versions of the claims in this application.

Listing of Claims

1. -14. **(Canceled)**

15. **(Currently Amended)** A kit for polynucleotide synthesis on a target nucleic acid, the kit comprising: a thermostable polymerase, a non-nucleic acid polyanion~~; at least 1.5 mM~~, magnesium and ~~between about 35-100 mM~~ monovalent cations,

wherein said non-nucleic acid polyanion is provided at a molar concentration relative to said thermostable polymerase that reversibly inhibits said thermostable polymerase.

~~with instructions to combine said non-nucleic acid polyanion and said thermosable polymerase o inhibit DNA synthesis in a temperature dependent manner~~.

16. **(Original)** The kit of claim 15 wherein the thermostable polymerase is Thermus aquaticus.

17. **(Original)** The kit of claim 15 wherein the non-nucleic acid polyanion is dextran sulfate.

18. **(Original)** The kit of claim 15 further comprising at least one nucleotide 5'-triphosphate.

19. **(Original)** The kit of claim 15 further comprising a pair of primers for the target nucleic acid.

20. **(Previously presented)** The kit of claim 15 wherein the non-nucleic acid polyanion has a molecular weight of from 1,500 to 500,000 da.

21. **(Previously presented)** The kit of claim 15 wherein the non-nucleic acid polyanion has a molecular weight of from 4,000 to 15,000 da.

22. **(Currently Amended)** A stock solution of pre-inhibited thermostable polymerase ~~composition~~ for polynucleotide synthesis comprising: a thermostable polymerase reversibly bound to a non-nucleic acid polyanion in a storage buffer, wherein said non-nucleic acid polyanion is provided at a molar concentration relative to said thermostable polymerase that reversibly inhibits said thermostable polymerase; and

wherein said stock solution lacks at least one of a template nucleic acid and a primer for said template nucleic acid.

23. **(Currently amended)** The stock solution~~composition~~ of claim 22 wherein the non-nucleic acid polyanion has a molecular weight of from 1,500 to 500,000 da.

24. **(Currently amended)** The stock solution~~composition~~ of claim 22 wherein the non-nucleic acid polyanion has a molecular weight of from 4,000 to 15,000 da.

25. **(Currently amended)** The stock solution~~composition~~ of claim 22 wherein the non-nucleic acid polyanion has a molecular weight of from 4,000 to 10,000 da.

26. **(Currently amended)** The stock solution~~composition~~ of claim 22 wherein the non-nucleic acid polyanion is a synthetic organic polysulfate selected from the group poly(anetholsulfonic acid), polyvinyl sulfate, and polystyrene sulfate.

27. **(Currently amended)** The stock solution~~composition~~ of claim 26 wherein the synthetic organic polysulfate is a sulfated oligo- or polysaccharide.

28. **(Currently amended)** The stock solution~~composition~~ of claim 27 wherein the sulfated oligo- or polysaccharide is a sulfated polymer or copolymer of the sugars selected from the group consisting of glucose, N-acetyl-glucosamine, galactouronic acid, hyalouronic acid, N-acetyl-galactosamine and fucose.

29. **(Currently amended)** The stock solution~~composition~~ of claim 28 wherein the sulfated polymer or copolymer of the sugar is selected from the group consisting of dextran sulfate, fucoidan, heparin, heparan sulfate, chondroitin polysulfate, keratan polysulfate, xylan polysulfate, and pentosan polysulfate.

30. **(Currently amended)** The stock solution~~composition~~ of claim 22 wherein the non-nucleic acid polyanion is at a concentration of from 0.1 μM to 1.5 μM.

31. **(Currently amended)** The stock solution~~composition~~ of claim 22 wherein the non-nucleic acid polyanion is at a concentration of from 0.2 μM to 1.0 μM.

32. **(Currently amended)** The stock solution~~composition~~ of claim 22 wherein the thermostable polymerase is selected from the group consisting of DNA polymerase, RNA polymerase, reverse transcriptase, and mixtures thereof.

33. **(Currently amended)** The stock solution~~composition~~ of claim 32 wherein the thermostable polymerase is a DNA polymerase and the DNA polymerase is from a thermophilic Eubacteria or a Archaebacteria.

34. **(Currently amended)** The stock solution~~composition~~ of claim 33 wherein the thermostable polymerase is selected from the group consisting of Thermus aquaticus, T. thermophilus, T. brockianus, T. flavus, T. ruber, Thermatoga maritima, Thermoplasma acidophilus, Pyroccocus furiosus, Pyroccocus woesii, Pyroccocus spec., Sulfolobus spec., and mixtures thereof.

35. **(Currently amended)** The stock solution~~composition~~ of claim 32 wherein the thermostable polymerase is a reverse transcriptase and wherein the reverse transcriptase is selected from the group consisting of MmLV reverse transcriptase, AMV reverse transcriptase, RSV reverse transcriptase, HIV-1 reverse transcriptase, HIV-2 reverse transcriptase, and mixtures thereof.

36. - 42. **(Canceled)**

43. **(Currently amended)** A kit for polynucleotide synthesis on a target nucleic acid comprising the stock solution of pre-inhibited thermostable polymerase ~~composition~~ of claim 22 in one container and optionally in a separate container a reaction buffer comprising monovalent cations between about 35-100 mM.

44. **(Previously presented)** The kit of claim 43 wherein the thermostable polymerase is Thermus aquaticus.

45. **(Previously presented)** The kit of claim 43 wherein the non-nucleic acid polyanion is dextran sulfate.

46. **(Previously presented)** The kit of claim 43 further comprising at least one nucleotide 5'-triphosphate.

47. **(Currently amended)** The kit of claim 43 further comprising a pair of primers for the target nucleic acid in said separate container.

48. **(Canceled)**